# Device for supporting and controlling a roller blind

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Abstract of **EP0717166**

A device for supporting and controlling a roller blind which includes a chain (68) which if operated in one direction causes the progressive lowering of the blind web (2) and pulled in the other direction causes the rapid raising of the web (2). A specific mechanism adapted to provide this kind of operation is described.

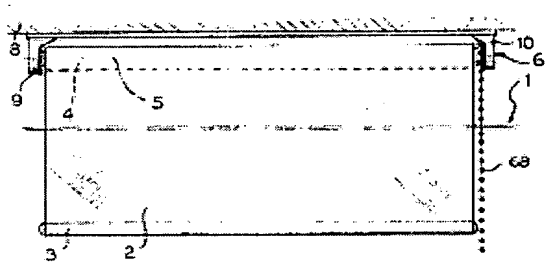


Fig.

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(54) **Device for supporting and controlling a roller blind**

Trage- und Steuervorrichtung für ein Rollo

Dispositif de support et de commande d'un store roulant

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(56) References cited:
**EP-A- 0 093 289**



EP 0 717 166 B1

## Description

The present invention relates to devices for supporting and controlling roller blinds. Such a device is for instance known from EP-A-0 093 289.

The object of the present invention is that of providing a device of the above indicated type which is relatively simple and reliable while enabling the user to control lowering and raising of the blind with easy and rapid operations.

In order to achieve this object, the invention provides a device for supporting and controlling a roller blind, having the features indicated in the annexed claim 1.

The invention will be now described with reference to the annexed drawings, given purely by way of non limiting example, in which:

figure 1 is a front view of a blind provided with the device according to the invention,
figure 2 is a longitudinal cross-sectional view of a preferred embodiment of the device according to the invention,
figure 3 is an exploded perspective view of a portion of the device according to the invention, at one end of the roller of the blind,
figure 4 is an exploded perspective view of the part of figure 3,
figure 5 is an exploded perspective view of a further portion of the device according to the invention at the end of the roller of the blind which is opposite to that of figure 3, and
figures 6-9 are cross-sectional views taken along lines VI-VI, VII-VII, VIII-VIII, IX-IX of figure 2.

In the drawings, reference numeral 1 generally designates a roller blind comprising a blind web 2 having a lower edge strengthened by a bar 3 and an upper edge (not visible in the drawings) anchored to a roller 4 for winding the web which is rotatably supported around a horizontal axis 5 by a fixed support structure 6 (figure 1).

The fixed support structure 6 includes a metal profile 7 (see for example figures 4, 5) which is to be anchored by any known fixing means to a ceiling 8 or a wall, for example above a window aperture which blind 1 is to cover.

The fixed support structure 6 includes two end heads 9, 10 (figure 1) which rotatably support the two ends of roller 4 respectively.

With reference to figure 5, the end head 9a comprises a housing of plastic material 9a, including a front wall 11 and two side walls 12, as well as an upper wall 13 (figure 9). The housing 9a of plastic material has its upper portion fitted inside the profile 7 (figure 9). The end head 9 further includes a body of plastic material 14 which has two vertical side arms 15 which are elastically deformable, and end with end teeth 16 adapted to be engaged by snap action each within a window 17 of the cooperating side wall 12 of the housing 9a. In this manner, the body 14 may be snap mounted into housing 9a once this body has received the respective end of the roller 4 of the blind, to the advantage of convenience of assembling of the device.

As visible in figures 2, 5 and 9, roller 4 has a tubular body which, at its end facing towards head 9 (the end on the left in figure 1) which rotatably supports a disk 18 at its inside which is connected to the conventional spring which biasses the roller towards the position of complete winding of web 2. This spring is not shown in the annexed drawings, since it may be made in any known type and it does not fall, taken alone, within the scope of the present invention. According to the conventional art, when the web 2 of the blind 1 is lowered, the roller 4 rotates (in an anticlockwise direction with reference to figures 5, 9) causing the loading of said spring, which therefore is able to return the web to its raised position when it is no longer locked in a lowered condition.

Turning to figures 2, 5 and 9, disk 18 is provided with an axial tab 19 projecting outwardly which is kept locked on head 9 in a way which will be described after, in order to enable said return spring to be loaded when the blind web is lowered. However, the anchoring angular position of tab 19 on head 9 is adjustable, in order to allow for an adjustment of the load of the return spring located inside roller 4. To this end, tab 19 is received in an axial slot 20 of a circular disk 21 having a central cylindrical pin 22 which is freely rotatably received within a circular through hole 23 of the body 14 of plastic material and is axially retained therein by an elastic ring 24. Disk 21 is further provided with a cylindrical skirt 25 surrounding the central pin 22 and interrupted at one portion so as to define two radial stop surfaces 26, 27.

At the face of the body 14 of plastic material which faces towards roller 4, this body has a projecting annular edge 28 which defines said through hole 23. On said edge 28 there is mounted a helical spring coupling 29, formed by a helical spring which is tightened by its elastic load around the edge 28 and has two end tails 30, 31 projecting radially at the area wherein the skirt 25 is interrupted. On the body of plastic material 14 there is also freely rotatably mounted the hub 32 of a circular knob 33 having a knurled gripping peripheral surface 34. The hub 32 of knob 34 has an inner radial tooth 35 which radially projects inside the area in which the skirt 25 is interrupted, between the two end tails 30, 31 of spring 29.

The knob 33 serves for adjusting the load of the return spring means of roller 4. When knob 33 is not operated, tab 19 connected to the return spring located inside roller 4 is kept in a fixed position with respect to the end head 9. In fact, assuming that the web 2 of the blind is lowered causing an anticlockwise rotation, with reference to figure 5, of roller 4, this rotation cannot be followed by disk 18 and tab 19, since the latter is rotatably connected to disk 21 and disk 21 cannot rotate since

abutment surface 27 impinges against the end tail 31 of spring 29 which is tightened around the edge 28 of body 14 (fixed) and therefore prevents a rotation of disk 21. Also during winding of web 2, a corresponding rotation of roller 4 (in a clockwise direction with reference to figure 5) cannot be followed by tab 19, since such a rotation brings the abutment surface 27 of disk 21 against the end tail 30 of spring 29 which is still tightened in a fixed position above the annular edge 28 of body 14 of the support fixed structure.

However, by rotating, in either direction, knob 33, the tooth 35 is caused to engage one or the other of the two end tails 30, 31 of spring 29. In this manner, spring 29 is opened and can freely rotate around the annular edge 28 of the fixed body 14. The thrust of tooth 35 is also transmitted to the corresponding abutment surface (26 or 27) of disk 21 which is then caused to rotate. This causes a corresponding rotation of tab 19 and hence a variation of the load of the return spring (not visible in the drawings) located inside roller 4.

Therefore, due to the above described structure, the device is able on one hand to rotatably support one end (that on the left with reference to figure 1) of the blind roller and on the other hand to allow for load of the spring biassing the roller towards the position of complete winding of web 2 of the blind to be adjusted.

With reference now to figures 2-4 and 6-8, at its opposite end, roller 4 of the blind has inside a first tubular body 36 of plastic material. Body 36 has outer longitudinal wings 37 (figures 3, 4) which are received with an interference fit within roller 4 (figure 2) to connect permanently in rotation the first tubular body 36 to roller 4.

The first tubular body 36 is rotatably supported around axis 5, in a way which will become apparent in the following, on a second fixed tubular body 38 (figures 2, 4) forming part of the end head 10 of the fixed support structure 6. More precisely, the first tubular body 36 is rotatably mounted on the second tubular body 38 with the interposition of a third tubular body 39 (figures 2, 4), which will be illustrated in detail in the following.

The end head 10 forming part of the fixed support structure 6 also includes a housing of plastic material 40 which has its upper part (figures 6-8) fitted within profile 7. The housing 40 has a centrifugal mass brake 41 inside (shown only diagrammatically in figure 2) which can be made in any known way and does not fall, taken alone, within the scope of the present invention. According to the conventional art, brake 41 is for slowing down the rotation of roller 4 when the latter returns towards its position of complete winding of the blind web due to its return spring means. The housing 40 has a central mouth 42 from which there extends a rotatable hexagonal shaft 43 connected in rotation to brake 41. Shaft 43 is received into an hexagonal cavity 44 (figure 2) formed at one end of a shaft 45 (figures 2, 4) which is freely rotatably mounted within the tubular body 36 and at its opposite end has two deflectable tapered axial wings 46 to receive and lock by a snap action a bush 47 thereon which is received inside the end of the tubular body 36 facing towards the inside of blind roller 4. Bush 47 is normally tightened within the coils of a helical spring coupling 48 having a radial end tail 49 received in a longitudinal slot 50 (figures 2, 4) of the tubular body 36. The coupling 48 is for connecting the centrifugal mass brake 41 to the blind roller when the latter is returned by its return spring means towards the raised position of web 2 and to discontinue this connection when the web is lowered, so as to avoid that brake 41 renders this operation more difficult. Indeed, when the blind web is lowered (in the way which will be described in detail in the following) roller 4 rotates in an anticlockwise direction (with reference to figures 3, 4 and 6-8). In this condition, the slot 50 of tubular body 36 actuates the end tail 49 of spring 48 so as to open the coils of the latter to cause a free rotation thereon around bush 47. Therefore, in this condition, the rotation of the roller is not transmitted to the centrifugal mass brake. However, when the roller is caused to rotate in the opposite direction (i.e. in the clockwise direction with reference to the figures) the slot 50 pushes the end tail 49 in the direction corresponding to a tightening of spring 48 around bush 47. In this condition, therefore, spring 48 transmits the rotation of roller 4 and tubular body 36 to bush 47, which on its turn transmits its rotation to the centrifugal mass brake 41 by means of shaft 45 and shaft 43 (figure 2).

The third tubular body 39 has an intermediate disk 51 from which there project two opposite tubular portions 52, 53. On the side of the tubular portion 53, disk 51 is further provided with a cylindrical skirt 54 coaxially surrounding the tubular portion 53 and having an interruption so as to define radial abutment surfaces 55, 56 (figures 4, 6). Disk 51 further pivotally supports, by means of a radial pin 57, a rocking lever 58 having ends 58a, 58b projecting from opposite sides of disk 51 through an aperture thereof. On the side facing towards roller 4, disk 51 further has an axial wing 59 (figures 4, 7).

As shown in figure 2, the tubular portion 53 of tubular body 39 is freely rotatably mounted within the second tubular body 38. Similarly, the tubular portion 52 is freely rotatably mounted within the first tubular body 36.

On the fixed tubular body 38 a one-way helical spring coupling 60 is tightened which is formed by a helical spring which is tightened by its elastic load on the tubular body 38 and has an end radial tail 61. This tail is arranged in the area in which the cylindrical skirt 54 of tubular body 39 is interrupted (see also figure 6).

The tubular body 36 has an end portion 36a facing towards the end head 10 on which a helical spring coupling 62 is tightened having end radial tails 63, 64.

As it will become apparent from the following description, coupling 62 serves to normally connect in rotation tubular body 36 to tubular body 39, while discontinuing this connection during the winding stage of the blind web. Coupling 60, on the other hand, serves to keep the blind roller 4 locked over the fixed tubular body

38, by means of the interposition of the tubular body 36 and the tubular body 39, when the blind web must be stopped in any partially or totally lowered position. The detailed operation of these couplings will be described later.

The fixed tubular body 38 forms part of a plate 65 of plastic material which is fixed to the housing 40 by a snap action as well as with the aid of a screw 66 (figure 2).

In order to control the blind, there is provided a driving pulley 67 (figure 4) which is rotatably mounted on the tubular body 39 (figure 2) and can be engaged by a flexible driving member 68, which in the illustrated example is formed by a chain of balls 69 adapted to engage seats 70 formed on the periphery of pulley 67. With reference to figure 6, the ball chain 68 has two vertical runs 71, 72 which extend sufficiently downwardly to enable the user to operate the blind easily; these runs are to be pulled downwardly to cause the progressive lowering or the rapid raising of the blind web 2 respectively. With reference to figures 4, 6, the driving pulley 67 has an inner radial tooth 73 which is arranged (figure 6) between the radial tail 61 of spring 60 and the end 58b of the rocking lever 58. As it will become apparent in the following, the ends 58b and 58a of the rocking lever are for cooperation with the radial tooth 73 of the driving pulley 67 and the tail 64 of spring 62 respectively in order that when the run 72 of chain 68 is pulled, in order to cause the rapid raising of the blind web 2, the tooth 73 rotates the rocking lever 58 so as to cause an opening of spring 62. This opening discontinues the connection between tubular body 36 (figure 4) connected to roller 4 of the blind (which is biassed towards the web wound position by its return spring means) and the tubular body 39, which cannot rotate with respect to the fixed tubular body 38, since its radial abutment surface 56 impinges against the tail 61 of spring 60 tightened over the tubular body 38. In this condition, the roller is therefore free to rotate rapidly towards the position of complete winding of the web. This stage of the operation of the device will however be further illustrated in the following general description of the operation of the device according to the invention.

Still with reference to figure 4, the disengagement of the ball chain 68 from driving pulley 67 is prevented by a wall 74 forming part of an annular plate 75 of plastic material which can be mounted by snap action on plate 65 in the position illustrated in figure 4, or in a position rotated by 90° with respect thereto, in case profile 7 is fixed to a vertical wall rather than to a sealing.

The operation of the above described device is as follows:

as already discussed, by operating knob 33 (figure 5) it is possible to adjust the load of the return spring means of the blind roller 4 which bias the latter towards the position of complete winding of web 2. As also discussed already in the foregoing, once knob 33 has been left in a determined position, the end head 9 prevents tab 19 inside roller 4 from following the rotation of the roller, thus causing the return spring means to load progressively when the web 2 of the roller is lowered.

At the opposite end of the blind roller the following takes place.

Assuming that the blind web 2 is completely wound on roller 4, its winding thereof may be caused by pulling continuously the run 71 of the ball chain 68 (figure 6) so as to cause an anticlockwise rotation (with reference to figure 6) of the drive pulley 67. As a result of this rotation, the tooth 73 (figure 6) pushes the end tail 61 of spring 60 so as to open the coils of the spring which therefore can freely rotate around the fixed tubular body 38. The thrust of tooth 73 is transmitted to the abutment surface 56 of skirt 54 of the tubular body 39 which is thus caused to rotate along with the driving pulley. The rotation of tubular body 39 is on its turn transmitted by the axial wing 59 to the tail 63 of spring 62 (figures 4 and 7) which is tightened around the portion 36a of the tubular body 36 and therefore transmits its rotation to said tubular body and consequently to the blind roller 4. Thus, the roller is caused to rotate in an anticlockwise direction, with reference to figures 6-8, causing thereby the lowering of the web 2 of the blind.

When the pulling action on run 71 of chain 68 is discontinued, the blind web 2 remains locked in the lowered position which has been reached, whichever this position may be. Indeed, the return spring means associated with the left end (with reference to figure 1) of roller 4 would tend to rotate this roller in a clockwise direction (with reference to figures 6-8). However this rotation is prevented by that the tail 63 of spring 62 (which in this condition is still tightened over tubular body 36 and therefore is connected in rotation to roller 4) would tend to push the axial wing 59 of the tubular body 39 to cause a clockwise direction of the latter. The clockwise rotation of the tubular body 39 is however prevented by that the abutment surface 56 (figure 6) of skirt 54 pushes the end tail 61 of spring 60 so as to tighten this spring around the fixed tubular body 38. Therefore, the spring 60 is locked over the fixed tubular body 38 and prevents the rotation of the blind roller, against the action of the return spring means.

Once the blind has been locked in any partially or completely lowered position, it may be unlocked to cause a rapid return of web 2 to the raised condition by pulling the run 72 of chain 68. A short pulling action imparted to this run is sufficient to cause the engagement of the tooth 73, as already discussed, against the end 58b of the rocking lever 58. This rocking lever is thus compelled to rotate so as to bring its opposite end 58a against the tail 64 of spring 62 which is thus opened discontinuing the rigid connection between the tubular body 36 (connected to the blind roller) and the tubular body 39 (locked by spring 60 on the fixed tubular body 38). The tubular body 36 is therefore free to rotate inside the coils of spring 62, along with roller 4, under the action of the return spring means of the latter. In this manner,

the web 2 is rapidly wound on roller 4.

As already discussed above, during the lowering stage of the blind web, the slot 50 causes an opening of the coils of spring 48 so as to discontinue the connection between the centrifugal mass brake 41 and the blind roller. However, during the rapid winding stage of web 2, the tubular body 36 rotates in the direction tending to tighten the coils of spring 48 over the push 47. Therefore, in this condition, roller 4 is connected in rotation to the centrifugal mass brake 41, that slows down the roller during the winding stage.

As it will become readily apparent from the foregoing description, the device according to the invention enables the user to control the blind with very simple, convenient and rapid operations. On the other hand, it has a relatively simple and reliable structure. The possibility to adjust the load of the return spring means for the roller provided by the device illustrated in figure 5 renders the invention further advantageous. Furthermore, again with reference to figure 5, the possibility to snap engage the body 14 into the housing 10 following its coupling with roller 4 renders the assembling operation of the blind particularly simple.

**Claims**

1. Device for supporting and controlling a roller blind (1) characterized in that it comprises, in combination:

   - a support structure (6), which is to be fixed to a ceiling (8) or a wall,
   - a blind roller (4) on which there is wound a blind web (2) and which is rotatably supported around a horizontal axis (5) by said support structure (6), said roller (4) being provided with spring means biassing the roller towards a rest position in which the web (2) is completely wound thereon,
   - a centrifugal mass brake (41) carried by the support structure (6) and connected in rotation to one end of the roller (4) of the blind (1), to slow down the rotation of the roller when the latter is returned towards its rest position by said spring means,
   - said device being further characterized in that:

     a) one end of the blind roller (4) is rigidly connected in rotation to a first tubular body (36),
     b) said first tubular body (36) is connected to said centrifugal mass brake (41) with the interposition of a first one-way helical spring coupling (48) which provides the connection only when the roller (4) rotates in the direction of winding of the web (2),
     c) said first tubular body (36) is rotatably mounted with respect to a second fixed tubular body (38), forming part of the support structure (6) with the interposition of a second one-way helical spring coupling (60) which locks the first tubular body (36) on the second fixed tubular body (38) when the roller (4) tends to rotate in the direction of winding of the web, so as to lock the latter in any position after that it has been lowered,
     d) on the support structure (6) there is rotatably mounted a driving pulley (7) for the blind, engaged by a control member (68), for example a flexible control member such as a ball chain or the like, said driving pulley (67) having at least one inner tooth (73) able to unlock said second coupling (60) and to transmit the rotation of pulley (67) to the roller (4) of the blind when the pulley (67) is driven in rotation in the direction of lowering of the web (2) of the blind,
     e) between the first tubular body (36) and said second coupling (60) there is interposed a third tubular body (39) which is connected both to said second tubular body (38), by means of said second coupling (60), and to said first tubular body (36) by means of a third helical spring coupling (62) which maintains this connection when the blind is lowered or when it is left in any stationary condition,
     f) said third tubular body (39) is provided with a rocking lever (58) having one first end (58a) cooperating with said inner tooth (73) of the driving pulley (67) and a second end (58b) cooperating with said third coupling (62), so that when one tends to rotate the driving pulley (67) in the direction of winding of web (2) of the blind, said tooth (73) causes a rocking movement of said rocking lever (58) which causes said third coupling (62) to be unlocked, so that, while the third tubular body (39) is kept locked on the second fixed tubular body (38) by said second coupling (60), the first tubular body (36), and the blind roller (4) therewith is free to rotate under the action of its return spring means towards the position of complete winding of web (2) of the blind.

2. Device according to claim 1, characterized in that at its second end opposite to said first end, roller (4) is provided with adjustment means (33, 35, 29, 21) for adjustment of the load of said return spring means.

3. Device according to claim 1, characterized in that said support structure (6) comprises a profile (7)

and two end heads (9, 10) mounted onto said profile (7), one of said end heads (9) comprising a housing (9a) and a body (14) which rotatably supports the roller (4) of the blind and is mounted by snap action on said housing (9a).

**Patentansprüche**

1. Trage- und Steuervorrichtung für ein Rollo (1) dadurch gekennzeichnet, daß sie folgendes in Kombination aufweist:

   - einen Träger (6), der an einer Decke (8) oder einer Wand befestigt wird,
   - eine Rollowalze (4), auf die eine Rollobahn (2) aufgerollt ist und die drehbar um eine horizontale Achse (5) durch den Träger (6) gelagert ist, wobei die Walze (4) mit Federmitteln versehen ist, die die Walze in eine Ruhestellung vorspannen, bei der die Rollobahn (2) vollständig auf dieser aufgerollt ist,
   - eine Schwungkraftbremse (41), die in dem Träger (6) enthalten ist und bei Drehung mit einem Ende der Walze (4) des Rollos (1) verbunden ist, um die Drehung der Walze zu verlangsamen, wenn diese durch die Federmittel in ihre Ruhestellung zurückgeführt wird,
   - wobei die Vorrichtung ferner dadurch gekennzeichnet ist, daß:

     a) ein Ende der Rollowalze (4) bei Drehung fest mit einem ersten röhrenförmigen Körper (36) verbunden ist,
     b) der erste röhrenförmige Körper (36) mit der Schwungkraftbremse (41) unter Zwischenschaltung einer ersten Einwegschraubenfederkupplung (48) verbunden ist, die die Verbindung nur herstellt, wenn die Walze (4) sich in die Richtung zum Aufrollen der Rollobahn (2) dreht,
     c) der erste röhrenförmige Körper (36) drehbar in bezug auf einen zweiten feststehenden röhrenförmigen Körper (38), der einen Teil des Trägers (6) bildet, unter Zwischenschaltung der zweiten Einwegschraubenfederkupplung (60) angebracht ist, welche den ersten röhrenförmigen Körper (36) mit dem zweiten feststehenden röhrenförmigen Körper (38) verriegelt, wenn die Walze (4) sich in die Richtung zum Aufrollen der Rollobahn drehen will, um so diese in jeder beliebigen Position, zu der sie heruntergelassen wurde, zu fixieren,
     d) auf dem Träger (6) eine Antriebsscheibe (7) für das Rollo drehbar angebracht ist, die mit einem Steuerteil (68), beispielsweise einem flexiblen Steuerteil wie einer Kugelkette oder dergleichen, in Eingriff steht, wobei die Antriebsscheibe (67) wenigstens einen Innenzahn (73) aufweist, der in der Lage ist, die zweite Kupplung (60) zu entriegeln und die Drehung der Scheibe (67) auf die Walze (4) des Rollos zu übertragen, wenn die Scheibe (67) zur Drehung in Richtung zum Herunterlassen des Rollos (2) angetrieben wird,
     e) zwischen dem ersten röhrenförmigen Körper (36) und der zweiten Kupplung (60) ein dritter röhrenförmiger Körper (39) zwischengeschaltet ist, der sowohl mit dem zweiten röhrenförmigen Körper (38) mittels der zweiten Kupplung (60) als auch mit dem ersten röhrenförmigen Körper (36) mittels einer dritten Schraubenfederkupplung (62) verbunden ist, die die Verbindung aufrecht erhält, wenn das Rollo heruntergelassen oder in irgendeiner beliebigen stationären Bedingung belassen wird,
     f) der dritte röhrenförmige Körper (39) mit einem Kipphebel (58) versehen ist, der ein erstes Ende (58a), das mit dem Innenzahn (73) der Antriebsscheibe (67) zusammenwirkt, und ein zweites Ende (58b) aufweist, das mit der dritten Kupplung (62) zusammenwirkt, so daß der Zahn (73), wenn man die Antriebsscheibe (67) in die Richtung zum Aufrollen der Rollobahn dreht, eine Kippbewegung des Kipphebels (58) bewirkt, der das Ausrücken der dritten Kupplung (62) veranlaßt, so daß der erste röhrenförmige Körper (36) und die Rollowalze (4), während der dritte röhrenförmige Körper mit dem zweiten feststehenden röhrenförmigen Körper (38) durch die zweite Kupplung (60) im Sperrzustand gehalten wird, mit diesen frei unter Wirkung ihrer Rückzugfedermittel zum vollständigen Aufrollen der Rollobahn (2) drehen können.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Walze (4) an dem zweiten, dem ersten Ende gegenüberliegenden Ende mit Einstellungsmitteln (33, 35, 29, 21) zum Einstellen der Belastung der Rückzugfedermittel versehen ist.

3. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der Träger (6) ein Profil (7) und zwei Endköpfe (9, 10) aufweist, die auf diesem Profil (7) angebracht sind, wobei einer dieser Endköpfe (9) ein Gehäuse (9a) und einen Körper (14) aufweist, der die Rollowalze (4) drehbar trägt und durch einen Schnappmechanismus an dem Gehäuse (9a) angebracht ist.

**Revendications**

1. Dispositif de support et de commande d'un rideau à rouleau (1) caractérisé par le fait qu'il comprend, en combinaison :

   - une structure de support (6), destinée à être fixée au plafond (8) ou à un mur,
   - un rouleau de rideau (4) sur lequel une toile de rideau (2) est enroulée et qui est supporté dans une position giratoire autour d'un axe horizontal (5) par la susdite structure de support (6), dite rouleau (4) étant pourvu d'éléments élastiques qui le rappellent dans une position de repos dans laquelle la toile (2) est entièrement enroulée autour de celui-ci,
   - un frein à masses centrifuges (41) porté par la structure de support (6) et fixé en rotation à une extrémité du rouleau (4) du rideau (1) pour ralentir la rotation de ce dernier quand celui-ci est rappelé dans sa position de repos par les susdits éléments élastiques,
   - ledit dispositif étant, en outre, caractérisé par le fait que :

     a) une extrémité du rouleau (4) du rideau est reliée de façon rigide en rotation à un premier corps tubulaire (36),
     b) ledit premier corps tubulaire (36) est relié audit frein à masses centrifuges (41) au moyen de l'interposition d'un premier joint unidirectionnel à ressort hélicoïdal (48) qui effectue ladite jonction uniquement quand le rouleau (4) tourne dans la direction d'enroulement de la toile (2),
     c) ledit premier corps tubulaire (36) est monté dans une position giratoire par rapport à un deuxième corps tubulaire fixe (38), faisant partie de la structure de support (6) au moyen de l'interposition d'un deuxième joint unidirectionnel à ressort hélicoïdal (60) qui bloque le premier corps tubulaire (36) sur le deuxième corps tubulaire fixe (38) quand le rouleau (4) tend à tourner dans la direction d'enroulement de la toile, de manière à bloquer cette dernière dans une position quelconque après que celle-ci ait été abaissée,
     d) sur la structure de support (6), une poulie de commande (67) du rideau est montée dans une position giratoire, engagée par un organe de commande (68), par exemple, un organe de commande flexible tel qu'une chaîne à billes ou tout élément similaire, ladite poulie de commande (67) ayant au minimum une dent interne (73) servant à bloquer ledit deuxième joint (60) et à transmettre la rotation de la poulie (67) au rouleau (4) du rideau quand la poulie (67) est commandée en rotation dans le sens de l'abaissement de la toile (2) du rideau,
     e) entre le premier corps tubulaire (36) et ledit deuxième joint (60) est interposé un troisième corps tubulaire (39) qui est relié audit deuxième corps tubulaire (38) au moyen dudit deuxième joint (60) ainsi qu'audit premier corps tubulaire (36) au moyen d'un troisième joint à ressort hélicoïdal (62) qui maintient ladite jonction quand le rideau est abaissé ou quand celui-ci est laissé dans une condition stationnaire quelconque,
     f) ledit troisième corps tubulaire (39) est pourvu d'un levier à balancier (58) ayant une première extrémité (58a) coopérant avec ladite dent interne (73) de la poulie de commande (67) et une deuxième extrémité (58b) coopérant avec ledit troisième joint (62) de manière à ce que, quand l'on tend à faire tourner la poulie de commande (67) dans la direction d'enroulement de la toile (2), la susdite dent (73) provoque une oscillation dudit levier à balancier (58) provoquant le déblocage dudit troisième joint (62) de manière à ce que, alors que le troisième corps tubulaire (39) reste bloqué sur le deuxième corps tubulaire fixe (38) par ledit deuxième joint (60), le premier corps tubulaire (36), et avec celui-ci le rouleau (4) du rideau, est libre de tourner sous l'action de ses éléments élastiques de rappel dans la position d'enroulement complet de la toile (2) du rideau.

2. Dispositif selon la revendication 1, caractérisé par le fait que, à sa deuxième extrémité opposée à ladite première extrémité, le rouleau (4) est pourvu d'éléments de réglage (33, 35, 29, 21) de la charge de ses éléments élastiques de rappel.

3. Dispositif selon la revendication 1, caractérisé par le fait que la susdite structure de support (6) comprend un profilé (7) et deux têtes d'extrémité (9, 10) montées sur le profilé (7), l'une desdites têtes d'extrémité (9) comprenant un boîtier (9a) et un corps (14) qui supporte en mode giratoire le rouleau (4) du rideau et est monté avec un cran sur le susdit boîtier. (9a).

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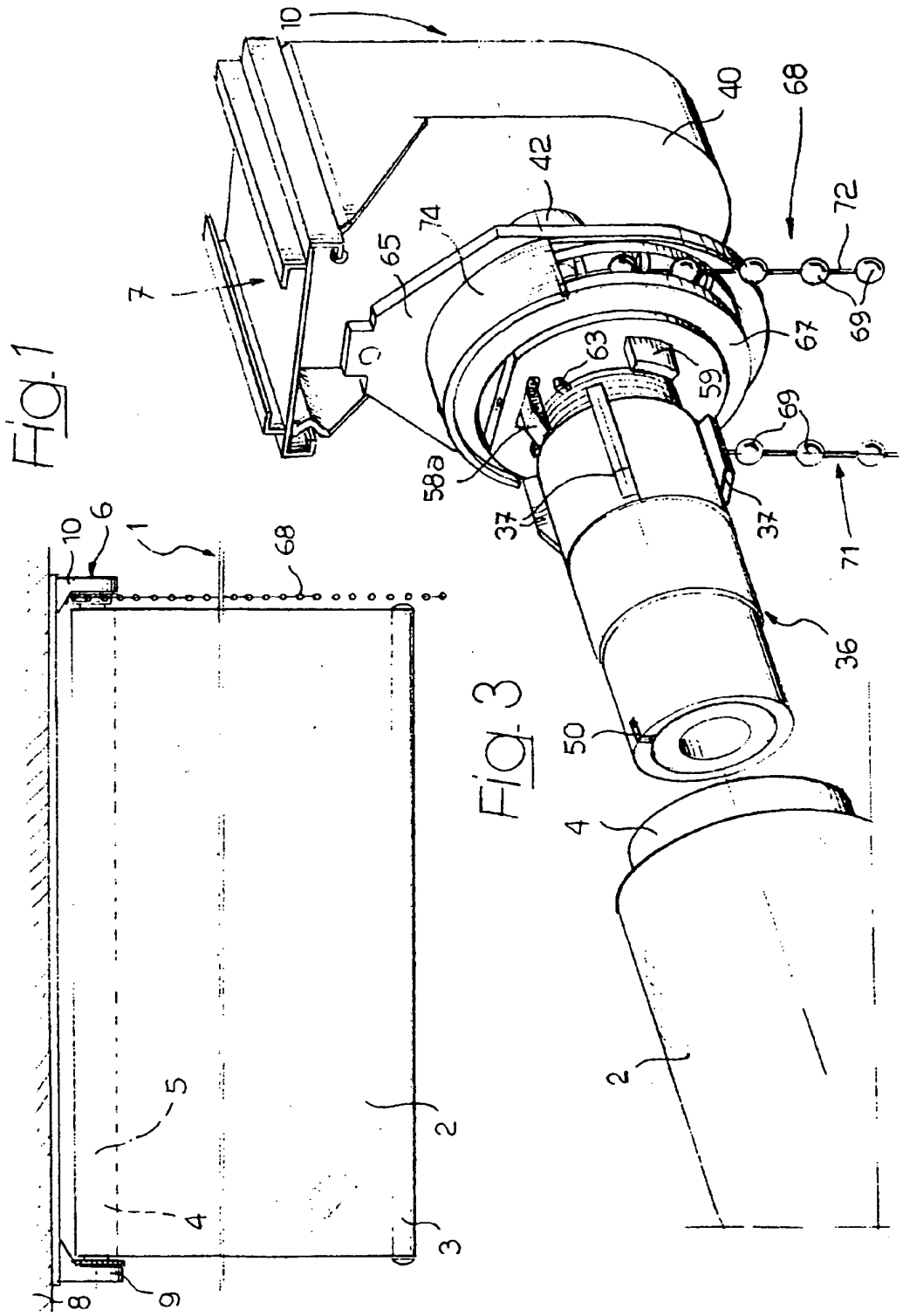


FIG. 1

FIG. 3

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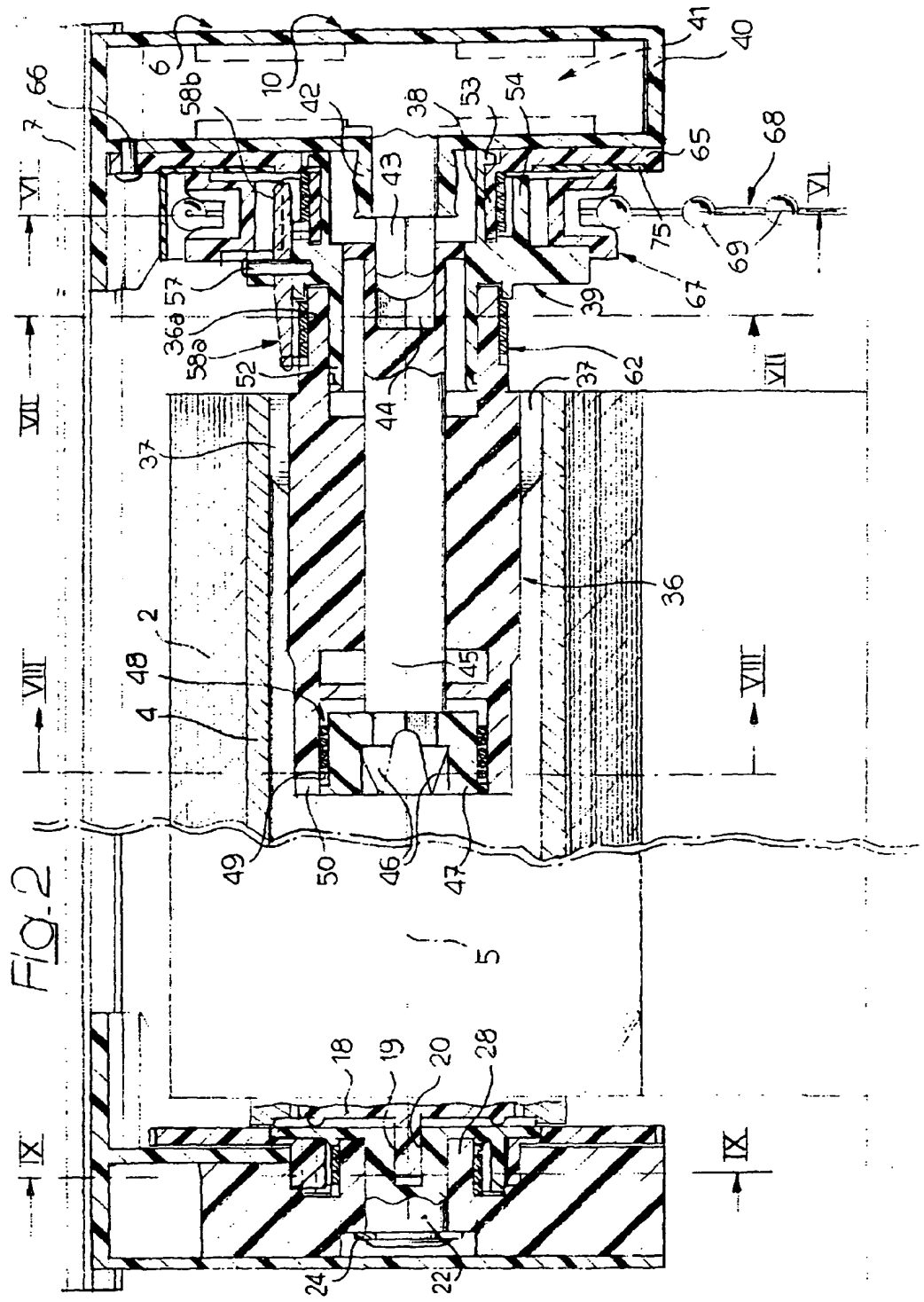
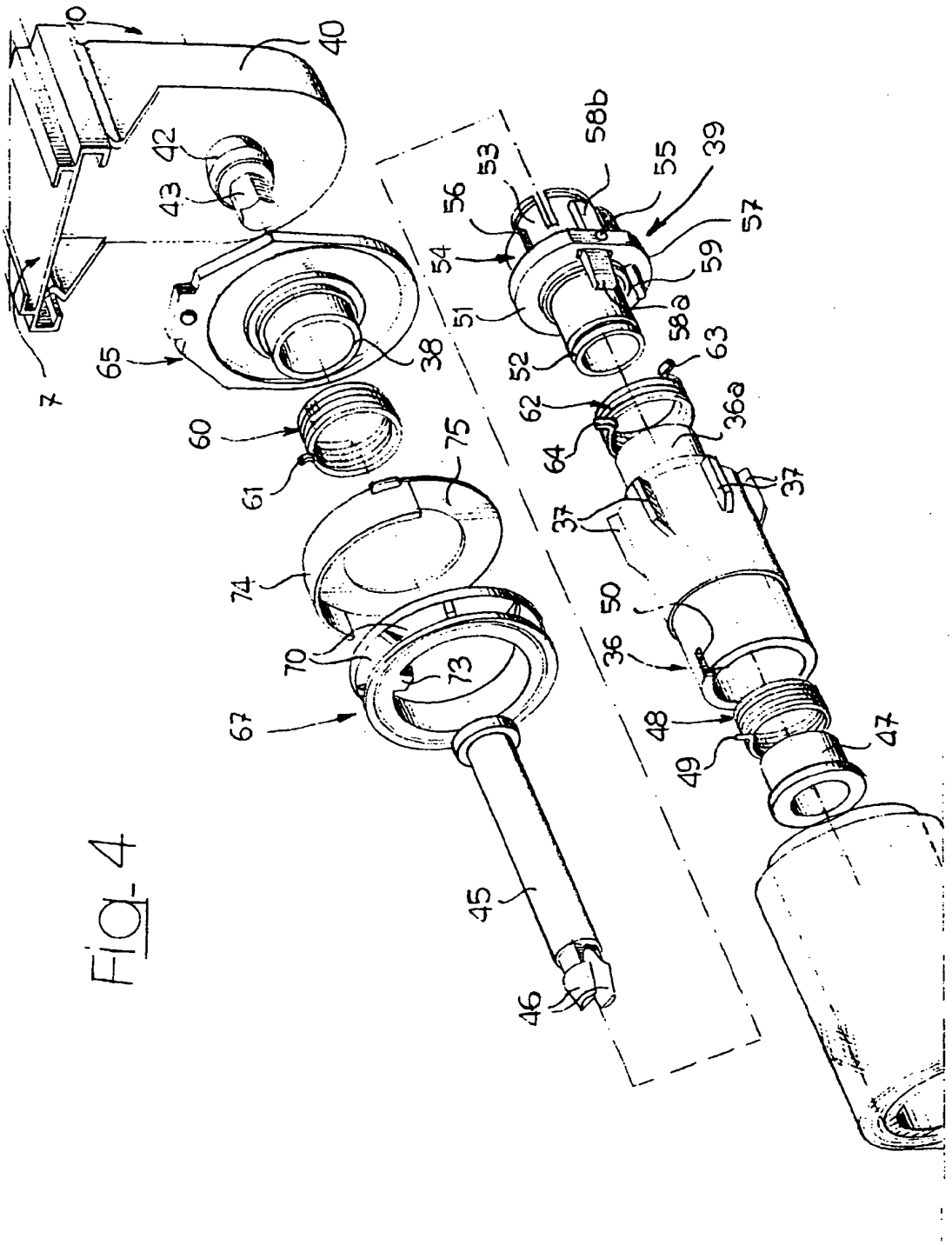



Fig. 2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58b
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58a
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62
36a
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FIG. 4

Fig 5

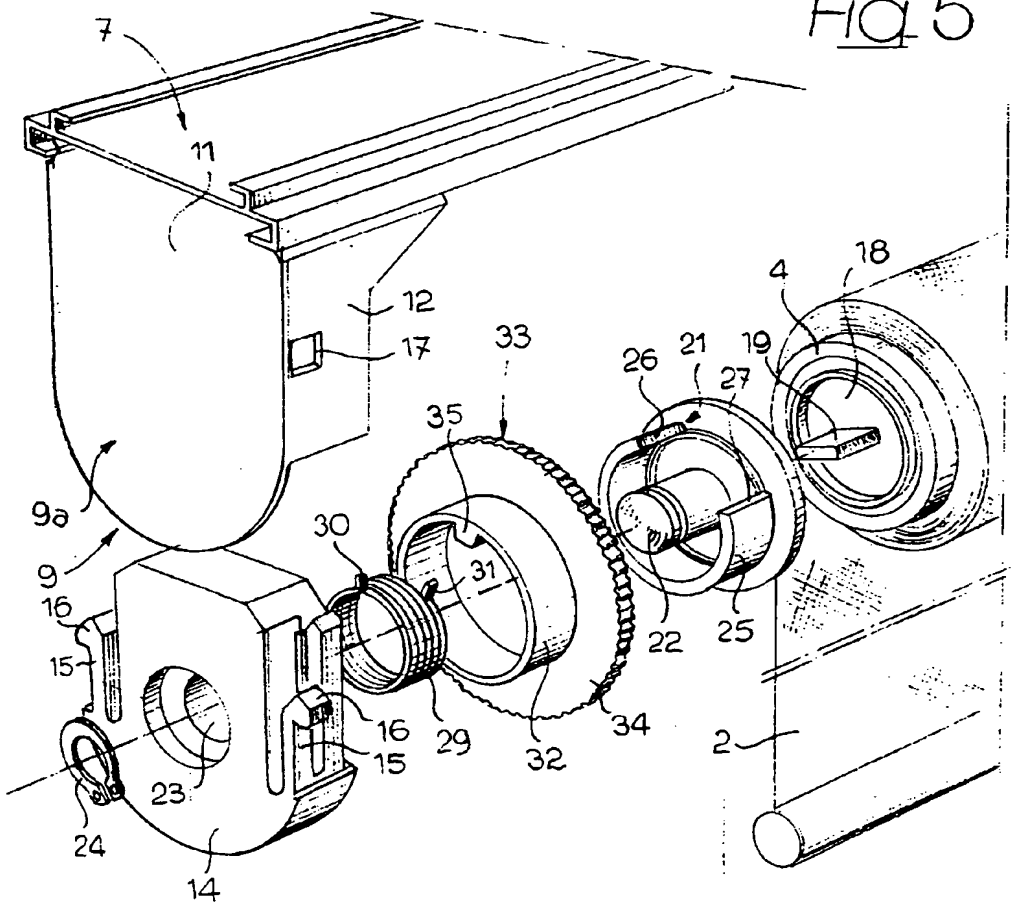
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Fig 9

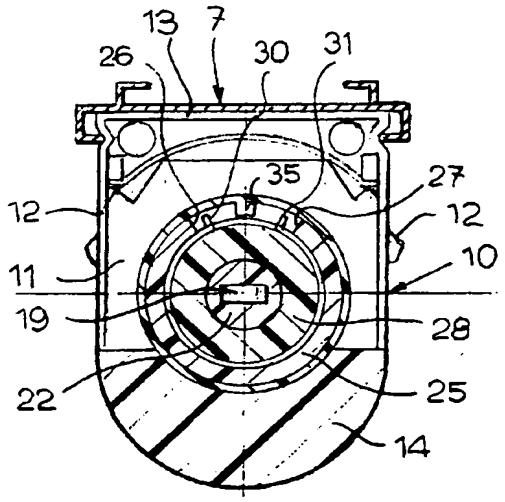
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Fig.6

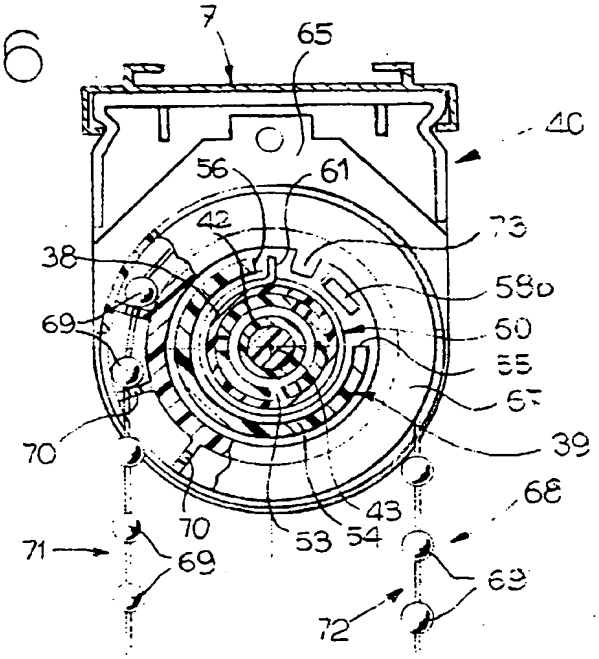


Fig. 8

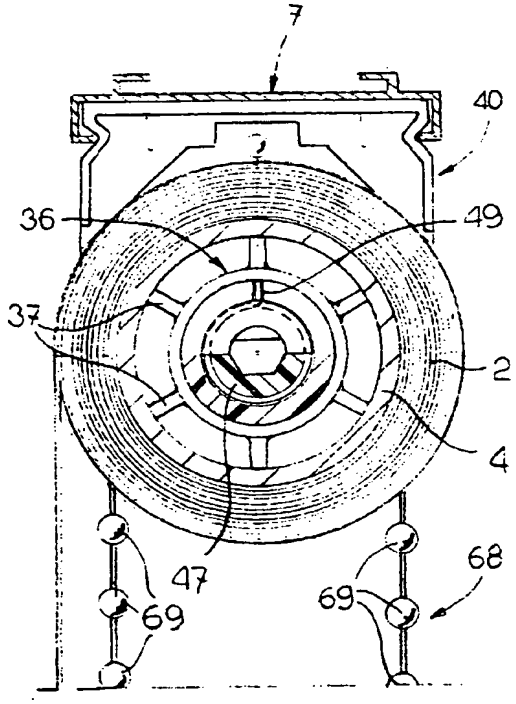


Fig. 7